

EXECUTIVE SUMMARY [NON-CONFIDENTIAL, NON-TECHNICAL ABSTRACT FOR PUBLIC INFORMATION OR PROGRAM PROMOTION]: State in layman's terms the application's broad, long-term objectives and specific aims, making reference to the potential public benefits of the project relevant to California. Do not include proprietary or confidential information. This may be distributed before the funding decision has been finalized.

A number of studies have reported the bioaccumulation of previously unmonitored organic contaminants in humans and wildlife. Among these contaminants are chemicals used as fire retardants (polybrominated diphenyl ethers), topical antiseptics (chlorinated phenols) and sunscreen ingredients (octylmethoxy cinnamate). These chemicals are believed to have leached into water supplies, eventually working their way up the food chain. Understanding the process by which these compounds are broken down in the body is very important in determining the risks of chemical exposure in human beings and other organisms, and is a critical consideration in the regulation of chemicals. Cytochrome P450 proteins, located predominantly in the liver microsomes, are a family of enzymes responsible for oxidizing a wide variety of chemicals including drugs and other "foreign" chemicals. In the present study, we wish to investigate the metabolism of several classes of these new organic contaminants in human liver microsomes. We will identify the metabolites formed from the reaction of the organic contaminant with the cytochrome P450 enzymes in microsomes, and determine if they are potential carcinogens. We will also determine which cytochrome P450 enzyme is responsible for the metabolic conversion.